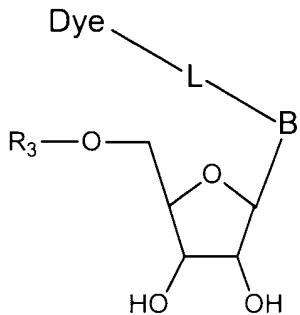


(ii) extending said at least one primer in the presence of a mixture of unlabeled dNTPs and at least one dye-labeled ribonucleotide having the formula:



wherein B is a nucleobase; L is a linker; R<sub>3</sub> is triphosphate, α-thiophosphate, or a salt thereof, and Dye is a reporter group; so that primer extension products that contain at least one dye-labeled ribonucleotide are formed;

(iii) cleaving one or more primer extension products to form a plurality of labeled fragments;

(iv) separating the extension products by size; and

(v) detecting the fragments to determine the polynucleotide sequence.

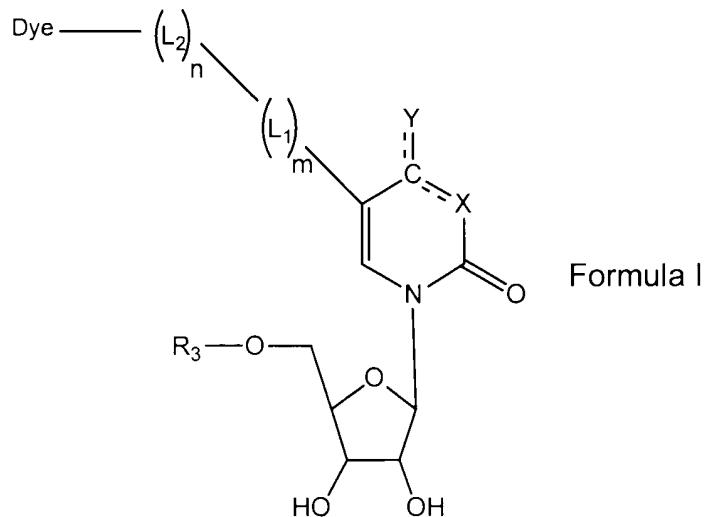
*G2* Please add new claims 124-126, as follows: *G2*

--124. (New) The method according to claim 101, wherein said at least one dye-labeled ribonucleotide is:

*G2* (1) a compound of formula I:

FINNEGAN  
HENDFRSON  
FARABOW  
GARRETT &  
DUNNER

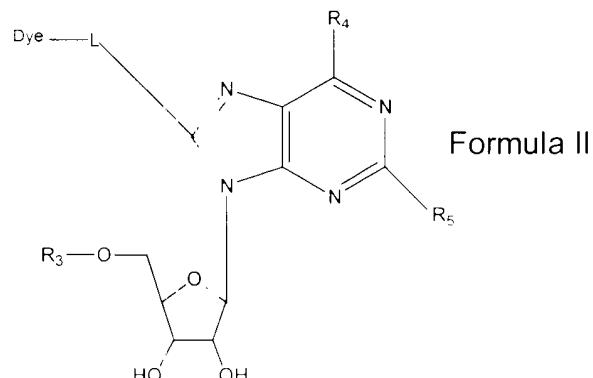
1300 I Street, NW  
Washington, DC 20005  
202.403.4000  
Fax 202.403.4400  
www.finnegan.com



62  
cwa

- wherein X is N, NH, or C;
- wherein Y is O or NH<sub>2</sub>;
- wherein R<sub>3</sub> is either triphosphate,  $\alpha$ -thiotriphosphate, or a salt thereof;
- wherein L<sub>1</sub> is a linker;
- wherein L<sub>2</sub> is a benzylamine linker or a phosphate linker;
- wherein n = 0-4, m = 0-4, and m + n is at least 1; and;
- wherein the dye is any reporter group;

(2) a compound of formula II:



- wherein L is a linker;
- wherein R<sub>4</sub> is either NH<sub>2</sub>, OH, or O, and B is either NH<sub>2</sub>, OH, or H;

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

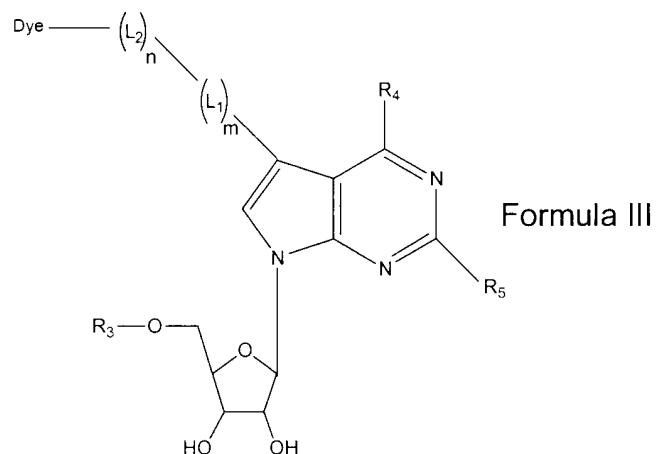
1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
www.finnegan.com

- wherein  $R_3$  is either triphosphate,  $\alpha$ -thiotriphosphate, or a salt thereof;

and

- wherein the dye is any reporter group;

(3) a compound of formula III:



- wherein  $L_1$  is a linker;

- wherein  $L_2$  is a benzylamine linker or a phosphate linker;

- wherein  $n = 0-4$ ,  $m = 0-4$ , and  $m + n$  is at least 1;

- wherein  $R_4$  is either  $NH_2$ ,  $OH$ , or  $O$ , and  $R_5$  is either  $NH_2$ ,  $OH$ , or  $H$ ;

- wherein  $R_3$  is either triphosphate,  $\alpha$ -thiotriphosphate, or a salt thereof;

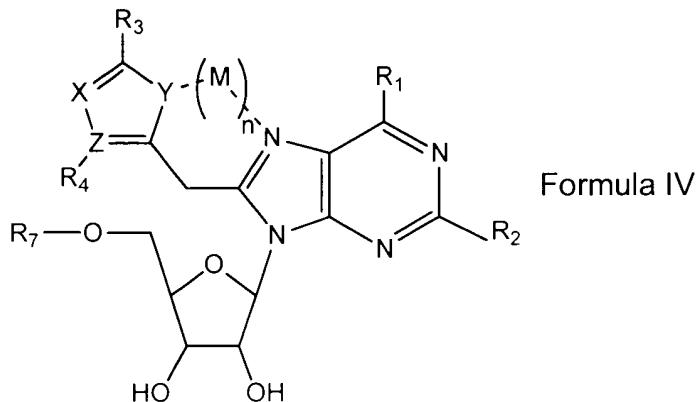
and

- wherein the dye is any reporter group;

(4) a compound of formula IV:

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

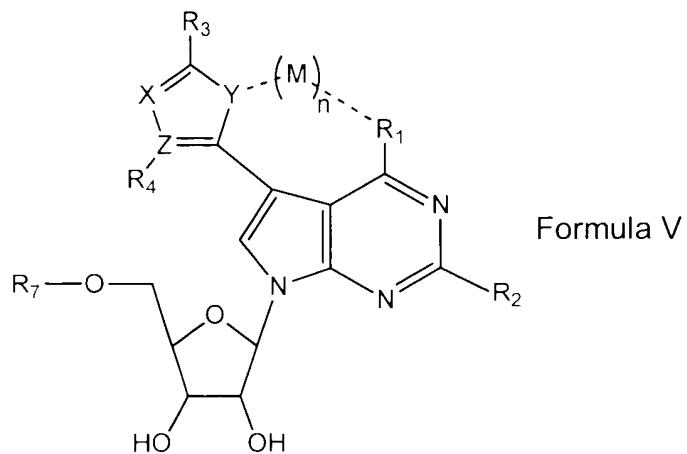
1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
www.finnegan.com



Formula IV

- wherein R<sub>1</sub>, R<sub>2</sub>, and R<sub>4</sub> are independently H, O, OR, S, SR, NR<sub>2</sub> or CR<sub>2</sub>;
- wherein R<sub>3</sub> is SR, NR<sub>2</sub>, OR, or CR<sub>2</sub> and comprises a reporter group;
- wherein R is hydrogen, alkyl, aryl, or an amino acid;
- wherein R<sub>7</sub> is either triphosphate, α-thiotriphosphate, or a salt thereof;
- wherein X, Y, and Z are independently carbon, nitrogen, oxygen, sulfur, phosphorus, or selenium;
- wherein n is 0 or 1; and
- wherein M is H<sub>2</sub>O or any metal;

(5) a compound of formula V:



Formula V

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

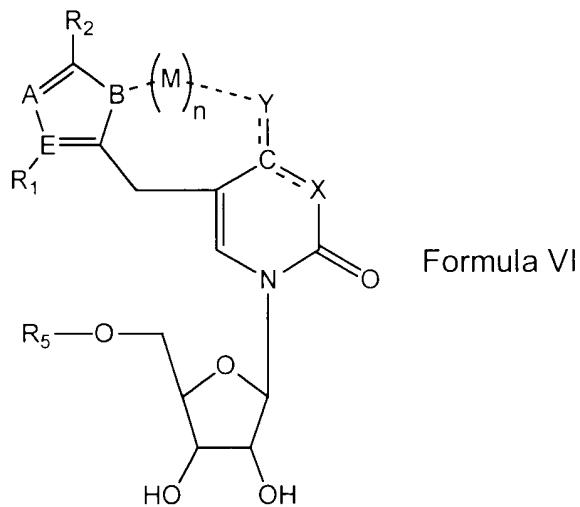
1300 I Street, NW  
Washington, DC 20005  
202.403.4000  
Fax 202.403.4400  
[www.finnegan.com](http://www.finnegan.com)

- wherein R<sub>1</sub>, R<sub>2</sub>, and R<sub>4</sub> are independently H, O, OR, S, SR, NR<sub>2</sub> or CR<sub>2</sub>;
- wherein R<sub>3</sub> is SR, NR<sub>2</sub>, OR, or CR<sub>2</sub> and comprises a reporter group;

- wherein R is hydrogen, alkyl, aryl, or an amino acid;
- wherein R<sub>7</sub> is either triphosphate,  $\alpha$ -thiotriphosphate, or a salt thereof;
- wherein X, Y, and Z are independently carbon, nitrogen, oxygen, sulfur, phosphorus, or selenium;
- wherein n is 0 or 1; and
- wherein M is H<sub>2</sub>O or any metal;

(6) a compound of formula VI:

*A2  
var*



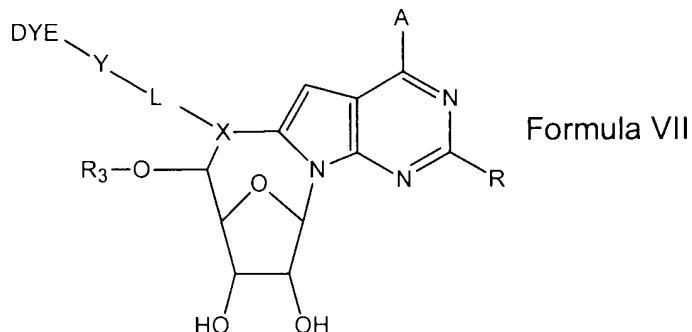
- wherein R<sub>1</sub> is H, O, OR, S, SR, NR<sub>2</sub>, or CR<sub>2</sub>,
- wherein R<sub>2</sub> is SR, NR<sub>2</sub>, OR, or CR<sub>2</sub> and comprises a reporter group;
- wherein R is hydrogen, alkyl, alkynyl, aryl, or an amino acid;
- wherein R<sub>5</sub> is either triphosphate,  $\alpha$ -thiotriphosphate, or a salt thereof;
- wherein X is N, NH, or C;
- wherein Y is O or NH<sub>2</sub>;
- wherein A, B, and E are independently C, N, O, S, P, or Se;
- wherein n is 0 or 1; and

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
www.finnegan.com

- wherein M is H<sub>2</sub>O or any metal;

(7) a compound of formula VII:



*A<sub>2</sub>  
cat*

- wherein A is NH<sub>2</sub>, OH, or O;

- wherein R is H, O, NR', S, CR', or halide;

- wherein R' is hydrogen or alkyl;

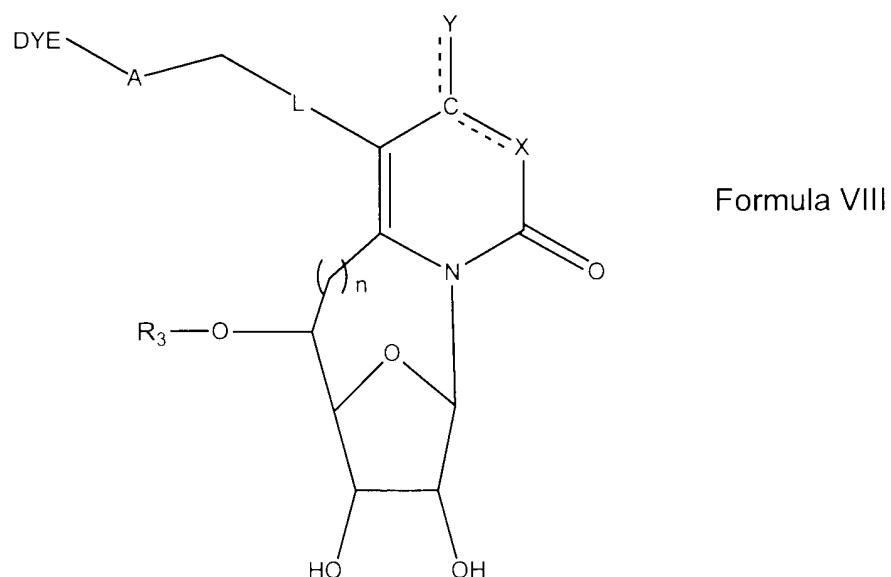
- wherein R<sub>3</sub> is either triphosphate,  $\alpha$ -thiotriphosphate, or a salt thereof;

- wherein L is alkyl;

- wherein X is CR or N and Y is O, S, or NH; and

- wherein the dye is any reporter group;

(8) a compound of formula VIII:



FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.403.4000  
Fax 202.403.4400  
[www.finnegan.com](http://www.finnegan.com)

- wherein X is N, NH, or C;

- wherein Y is O or NH<sub>2</sub>;

- wherein R<sub>3</sub> is either triphosphate, α-thiotriphosphate, or a salt thereof;

- wherein A is O, S, or NH;

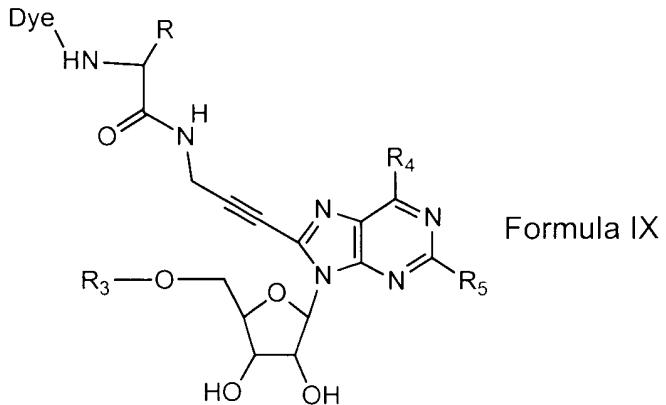
- wherein L is alkyl or aryl substituted at from 0 to 3 positions in a chemically reasonable manner with F, Cl, Br, I, C1-C18 alkyl, Silyl, OH, OR', SH, SR', SOR', SO<sub>2</sub>R', SO<sub>3</sub>, or NR'<sub>2</sub>;

- wherein R' is hydrogen or alkyl;

- wherein n is 1 to 10; and

- wherein the dye is any reporter group;

(9) a compound of formula IX:



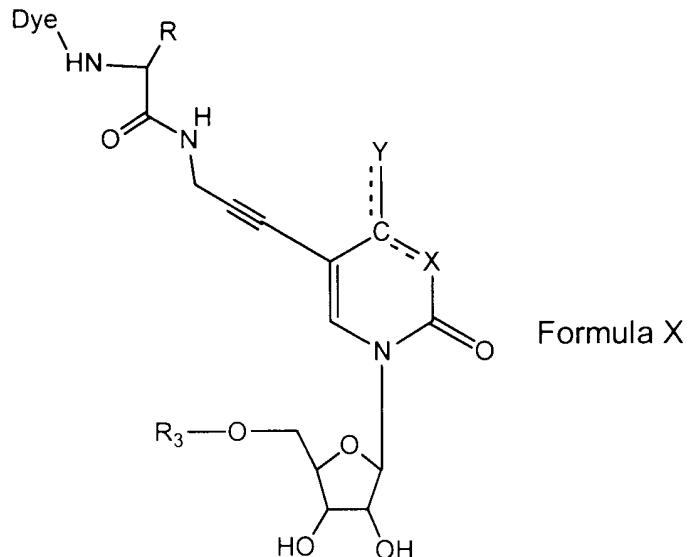
- wherein R<sub>4</sub> is NH<sub>2</sub>, OH, or O and R<sub>5</sub> is NH<sub>2</sub>, OH, or H, provided that if A is NH<sub>2</sub>, B is H and if A is O, B is NH<sub>2</sub>;

- wherein R<sub>3</sub> is either triphosphate, α-thiotriphosphate, or a salt thereof;

- wherein the dye is any reporter group; and

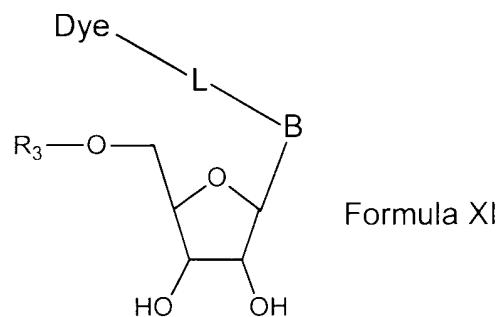
- wherein R is a side chain for mobility tuning;

(10) a compound of formula 10:



- wherein X is N, NH, or C;
- wherein Y is O or  $\text{NH}_2$ ;
- wherein  $\text{R}_3$  is either triphosphate,  $\alpha$ -thiotriphosphate, or a salt thereof;
- wherein Dye is any reporter group, and
- wherein R is a side chain for mobility tuning;

(11) a compound of formula 11:



- wherein B is a nucleobase selected from uracil, cytosine, adenine, 7-deazaadenine, guanine, and 7-deazaguanine;
- wherein  $\text{R}_3$  is triphosphate or a salt thereof;

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
[www.finnegan.com](http://www.finnegan.com)